**Tue-S10-28**

**INTERACTION OF FRUCTOSE 1,6 DIPHOSPHATE WITH RED CELL MEMBRANE**

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Fructose 1,6 diphosphate (FDP) incubated with rat erythrocytes stimulates the uptake of K⁺ ions which seems dependent upon an FDP hydrolysis. The inorganic phosphate liberated from FDP is that bound to the C6 position as shown by experiments with labeled FDP. The K⁺ entrance has been measured by the atomic absorption and by the K⁺-electrode methods. FDP does not seem to be able to stimulate the entrance of divalent ions and a proton ejection is another consequence of the interaction of FDP with the red cell membrane.

**Tue-S10-30**

**CALMODULIN AND CALMODULIN-BINDING PROTEINS IN AN INSULIN SECRETING TUMOUR**

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A Ca²⁺ dependent regulatory protein (MW 17,000) has been purified from a rat insulinoma. It was indistinguishable from beef and rat brain calmodulin on the basis of amino acid composition, tryptic peptide maps, UV absorption spectrum, Ca²⁺ binding properties, Ca²⁺ induced fluorescence enhancement, activation of rat brain cyclic nucleotide phosphodiesterase, and Ca²⁺ dependent binding to troponin I, myelin basic protein and histone H2b.

Affinity supports prepared from beef brain calmodulin bound several tumour cytosolic proteins in the presence of Ca²⁺. These could be eluted by EGTA or trifluoperazine.

The high tumour content of calmodulin (>300mg/kg wet wt.) suggests that it may be an important component in Ca²⁺ mediated events involved in insulin secretion.

**Tue-S10-32**

**MEMBRANOUS EFFECTS OF 4-ALKYLMORPHOLINE-N-OXIDES**

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Inhibition of bioenergetic processes /aerobic glycolysis, endogenous respiration, respiration with succinate, level of ATP, content of SH groups/ in Ehrlich ascites cells in vitro is a consequence of the cytoytic activity of the compound as mentioned above. Membranous effects were demonstrated by biochemical data as well as morphological changes after 2 h action of the compounds on these cells. It is evident that the biological membranes which, after interaction with amine oxides, undergo changes in molecular organization, osmotic and permeability properties are the site of action.

**Tue-S10-29**

**THE UPTAKE OF Rb⁺ IN Saccharomyces cerevisiae**

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The rate of Rb⁺-uptake in Saccharomyces cerevisiae at pH 4.5 decreases with time under anaerobic conditions with glucose as substrate. It is found that this uptake is not simply the result of a "constant-pump and leak" system. The Rb⁺ influx rate decreases, too. We have examined which factors contribute to the decrease in cation uptake capacity of the cell. The decrease in the influx rate can be partially attributed to alkalinisation of the cells during Rb⁺-uptake. Acidification of the cells with butyric acid leads only to partial restoration of the Rb⁺-uptake capacity. Another factor which may contribute to the decrease in uptake capacity is the concomitant decrease in cellular ATP content. Finally we examined the effect of Rb⁺-uptake upon the partition of DNA. This partition decreases only slightly and is not significant.

**Tue-S10-31**

**ENDOCYTOSIS IN THE AVIAN EOCYTE**

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Evidence from in situ studies has indicated that VLDL particles are selectively adsorbed to the plasma membrane of the hen's oocyte and are transferred into the cell by coated vesicles. The conditions for VLDL binding and coated pit formation in vitro were determined by electron microscopy. Both pH and Ca²⁺ were found to be important factors in the process. The observations provide a basis for a quantitative analysis of the system.

**Tue-S10-33**

**SUBCELLULAR LOCALISATION OF RAT LIVER NUCLEOTIDE PYROPHOSPHATASE - A NEW ORGANELLLE**

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Analytical subcellular fractionation of whole homogenates of rat liver on sucrose density gradients showed that the distribution profiles of NADH pyrophosphatase and part of the alkaline phosphodiesterase activity could not be accounted for by a localisation to any of the known organelles. Previous studies on the subcellular localisation of receptor bound glucagon have shown that this ligand is interiorised to membrane with similar biochemical properties. It is suggested that these membranes represent an organelle, hitherto undescribed in rat liver, functionally related to the ligand-receptor areas of the plasma membrane.